

ABSTRACT OF THE DISCLOSURE

The present invention provides a flexible WDM optical communication system in which each optical channel of the WDM optical communication signal can simultaneously accept multiple data formats. In one embodiment, the WDM optical system includes an optical waveguide having an optical add-drop multiplexer to selectively add and/or drop one or more optical channels to/from the WDM signal carried on the waveguide. A first source of data imparts information onto a first optical channel in a packet format while a second source of data imparts information onto the first optical channel in a time division multiplexed format. Other data sources having other data formats may also be included. An optical network interface electrically communicates with the data sources, placing the data from these sources onto the first optical channel which is generated from an optical source such as a laser. An optical path carries the optical channel from the optical source to the optical add-drop multiplexer. From there, it is multiplexed onto the optical waveguide, merging with the other optical channels of the WDM optical signal.